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10/682,087		10/10/2003	William Gage	71493-1200 /pw	9200
7380	7590	07/19/2006		EXAMINER	
SMART &	BIGGA	R	MILORD, MARCEAU		
P.O. BOX 29 900-55 MET	•		ART UNIT	PAPER NUMBER	
OTTAWA, ON KIP5Y6				2618	
CANADA				DATE MAILED: 07/19/2006	

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)				
		10/682,087	GAGE ET AL.				
	Office Action Summary	Examiner	Art Unit				
		Marceau Milord	2618				
Period fo	The MAILING DATE of this communication app or Reply	ears on the cover sheet with the c	orrespondence address				
A SH WHIC - Exte after - If NC - Failu Any	ORTENED STATUTORY PERIOD FOR REPLY CHEVER IS LONGER, FROM THE MAILING DANS INSTRUCTION OF THE MAILING THE	ATE OF THIS COMMUNICATION 36(a). In no event, however, may a reply be tim will apply and will expire SIX (6) MONTHS from a cause the application to become ABANDONEI	N. nely filed the mailing date of this communication. D (35 U.S.C. § 133).				
Status							
· · ·	Responsive to communication(s) filed on <u>10 Oc</u> This action is FINAL . 2b)⊠ This	<u>ctober 2003</u> . action is non-final.					
3)□	Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.						
Dispositi	ion of Claims	The standing recorded the region					
5) 6) 7)	Claim(s) 1-20 is/are pending in the application. 4a) Of the above claim(s) is/are withdraw Claim(s) is/are allowed. Claim(s) is/are rejected. Claim(s) is/are objected to. Claim(s) are subject to restriction and/or	vn from consideration.					
Applicati	on Papers						
10)⊠	The specification is objected to by the Examiner The drawing(s) filed on 10 October 2003 is/are: Applicant may not request that any objection to the Replacement drawing sheet(s) including the correction to oath or declaration is objected to by the Example 10 of the Example 11 of the content	a)⊠ accepted or b)⊡ objected drawing(s) be held in abeyance. See ion is required if the drawing(s) is obj	e 37 CFR 1.85(a). ected to. See 37 CFR 1.121(d).				
Priority u	ınder 35 U.S.C. § 119						
a)[Acknowledgment is made of a claim for foreign All b) Some * c) None of: 1. Certified copies of the priority documents 2. Certified copies of the priority documents 3. Copies of the certified copies of the prior application from the International Bureau see the attached detailed Office action for a list of	s have been received. s have been received in Application ity documents have been received (PCT Rule 17.2(a)).	on No ed in this National Stage				
Attachmen	t(s)						
2) 🔲 Notic 3) 🔀 Inforr	e of References Cited (PTO-892) e of Draftsperson's Patent Drawing Review (PTO-948) nation Disclosure Statement(s) (PTO-1449 or PTO/SB/08) r No(s)/Mail Date	4) Interview Summary Paper No(s)/Mail Da 5) Notice of Informal Pa 6) Other:					

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DETAILED ACTION

Claim Rejections - 35 USC § 103

- 1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cain (US Patent No 6958986 B2) in view of Hasty, Jr et al (US Patent No 7058018 B1).

Regarding claims 1, 12, 17, Cain discloses a method of selecting a communication path (fig. 4, figs. 12-16), in a wireless network comprising a plurality of nodes and wireless communication links between the nodes, from a plurality of potential communication paths comprising different combinations of said links from a source node to a target node, comprising the steps of, in the source node: determining for each link in the potential communication paths a cost of interference dependent upon a number of nodes affected by a signal sent via the respective link (col. 2, lines 21-67) ;determining a total cost for each potential communication path, the total cost being dependent upon combined costs of interference for the links of the respective potential communication path (col. 3, lines 11-52).

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However, Cain does not specifically disclose the step of selecting a communication path from the source node to the target node a potential communication path having a lowest total cost.

On the other hand, Hasty, Jr et al, from the same field of endeavor, discloses a system and method for evaluating at least one communication link between a transmitting node and a receiving node in a communications network. The system and method perform the operation of assigning respective link quality values to the respective communication links based on a transmit power level value at which the respective data packets were transmitted by the transmitting node over the respective links, a received sensitivity value of the receiving node receiving the data packets, and a receive signal strength indication value provided by the network for each respective link. The system and method can examine a content of a data packet being sent between the two nodes to determine the TPL, and can receive the RSSI value from a physical layer of the communications network. Accordingly, the system and method can determine which link that additional data packets are to be sent by the transmitting node to the receiving node via the communication link based on the link quality values. Specifically, the link having the highest link quality value is selected (col. 2, line 55- col. 2, line 22). Furthermore, these nodes further include a memory that is capable of storing, among other things, routing information pertaining to other nodes in the network. The nodes exchange their respective routing information, referred to as routing advertisements or routing table information, with each other via a broadcasting mechanism periodically, for example, when a new node enters the network, or when existing nodes in the network move (col. 4, lines 15-39). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply

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the technique of Hasty to the communication system of Cain in order to evaluate the integrity of a link between nodes based on the strength at which a signal is received over the link and transmission power level at which a signal is transmitted over the link, and determine whether to use the link for data packet routing between the nodes.

Regarding claims 2, 13, 18, Cain as modified discloses a method of selecting a communication path (fig. 4, figs. 12-16), including the step of, in the source node, determining for each link in the potential communication paths a cost of transmission dependent upon a data rate for a signal sent via the respective link, wherein the total cost determined for each potential communication path is also dependent upon combined costs of transmission for the links of the respective potential communication path (col. 2, lines 28-56; col. 8, line 43- col. 9, line 30; col. 36, lines 45-64)

Regarding claims 3, 14, 19, Cain as modified discloses a method of selecting a communication path (fig. 4, figs. 12-16), including the step of, in the source node, determining for each link in the potential communication paths a cost of coordination of transmissions on the link with transmissions from other nodes of the network, wherein the total cost determined for each potential communication path is also dependent upon combined costs of coordination for the links of the respective potential communication path (col. 2, lines 28-56; col. 8, line 43- col. 9, line 30; col. 36, lines 45-64)

Regarding claim 4, Cain as modified discloses a method of selecting a communication path (fig. 4, figs. 12-16), including the step of, in the source node, determining for each link in the potential communication paths a cost of coordination of transmissions on the link with transmissions from other nodes of the network, wherein the total cost determined for each

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potential communication path is also dependent upon combined costs of coordination for the links of the respective potential communication path (col. 2, lines 28-56; col. 8, line 43- col. 9, line 30; col. 36, lines 45-64)

Regarding claims 5, 15, 20, Cain as modified discloses a method of selecting a communication path (fig. 4, figs. 12-16), wherein the source node determines the total cost for each potential communications path as a sum of the combined costs for the links of the respective potential communication path (col. 9, line 38- col. 10, line 31).

Regarding claim 6, Cain as modified discloses a method of selecting a communication path (fig. 4, figs. 12-16), wherein the source node determines the total cost for each potential communications path as a sum of the combined costs for the links of the respective potential communication path (col. 9, line 38- col. 10, line 31).

Regarding claim 7, Cain as modified discloses a method of selecting a communication path (fig. 4, figs. 12-16), wherein the source node determines the total cost for each potential communications path as a sum of the combined costs for the links of the respective potential communication path (col. 9, line 38- col. 10, line 31).

Regarding claim 8, Cain as modified discloses a method of selecting a communication path (fig. 4, figs. 12-16), wherein the cost of interference for each link in the potential communication paths determined by the source node is also dependent upon a time interval required for a signal sent via the respective link (col. 11, line 24- col. 12, line 38).

Regarding claim 9, Cain as modified discloses a method of selecting a communication path (fig. 4, figs. 12-16), wherein the cost of interference for each link in the potential

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required for a signal sent via the respective link (col. 11, line 24- col. 12, line 38).

Regarding claim 10, Cain as modified discloses a method of selecting a communication path (fig. 4, figs. 12-16), wherein the cost of interference for each link in the potential communication paths determined by the source node is also dependent upon a time interval required for a signal sent via the respective link (col. 11, line 24- col. 12, line 38).

Regarding claim 11, Cain as modified discloses a method of selecting a communication path (fig. 4, figs. 12-16), wherein the cost of coordination for each link in the potential communication paths determined by the source node is also dependent upon a time interval required for coordinating activities (col. 8, line 19- col. 9, line 30).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Redi et al discloses a method for performing energy-based routing in communications networks.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marceau Milord whose telephone number is 571-272-7853. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MARCEAU MILORD

Marceau Milord

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Primary Examiner

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